WHAT IS CLAIMED AS NEW AND DESIRED TO BE SECURED BY LETTERS PATENT OF THE UNITED STATES IS:

1. A method for converting electrical power produced from a renewable energy power production facility into premier power, comprising the steps of:

producing from the renewable energy power production facility a time variable output power;

determining whether the time variable output power drops below a predetermined level; and

supplementing the time variable output power with power from at least one converter that includes at least one of a reactive power compensation mechanism and active power compensation mechanism.

2. The method of claim 1, wherein:

said renewable energy power production facility being at least one of a wind turbine generator facility, a solar power production facility, a wave energy-based power production facility, an ocean current-based power production facility, and a tidal power production facility; and

at least one of said at least one converter being a co-active converter.

3. The method of claim 2, further comprising the step of collecting the time variable power output from a plurality of renewable energy power production facilities.

4. The method of claim 1, wherein said producing step comprises:

producing the time variable output power as high voltage DC; and

converting said high voltage DC into premier power at a standard frequency.

5. The method of Claim 4, wherein said converting step includes converting said high voltage DC into premier power using a rotating electrical machine.

6. The method of Claim 5, wherein said co-active converter includes a prime mover coupled to said rotating electric machine.

7. The method of Claim 1, wherein said supplementing step includes controlling a reactive power flow into a power grid by changing a tap-changer position on a power transformer.

8. The method of Claim 1, further comprising providing an output power having sufficient current to trip circuit breaker if a fault condition is detected on a power grid.

9. The method of Claim 1, wherein said step of supplementing includes further supplementing the output power with power produced from a virtual energy storage facility.

10. A control processor for facilitating application of AC power from a renewable energy power production facility to a power grid, comprising:

an I/O device configured to receive data from the renewable energy power production facility regarding an amount of power to be delivered by said renewable energy power production facility to said power grid, said I/O device including

a communication port configured to transfer to a remote facility an indication regarding said amount of power;

a memory configured to hold computer readable instructions therein;

a processor configured to execute said computer readable instructions so as to implement,

a power monitoring mechanism configured to monitor said amount of power,

a message forming mechanism configured to include said indication in a coordination message that is sent through said I/O device to said remote facility regarding the amount of AC power applied by said renewable energy power production facility to said power grid.

11. The control processor of claim 10, wherein the renewable energy power production facility is a wind turbine power generation facility and said I/O device is configured to receive said data from the wind turbine power generation facility.

12. The control processor of claim 11, wherein said remote facility is another AC power generation facility and said another AC power generation facility is configured to adjust a power output thereof at a time that coincides with when said amount of power is delivered by said wind turbine power generation facility.

13. The control processor of claim 12, wherein said indication in said coordination message corresponds with AC power that is delivered contemporaneously to said power grid. ? context

14. The control processor of claim 12, wherein:

said indication in said coordination message corresponds with AC power that is to be delivered at a predetermined future time; and

said message forming mechanism is configured to include in said coordination message said predetermined future time so that said another AC power generation facility is informed as to when to adjust the power output thereof so as to offset at

least one of a surplus and a shortfall from said renewable energy power production facility relative to a predetermined amount.

15. The control processor of claim 12, wherein said I/O device is configured to receive a reply message from said another AC power generation facility confirming that the another AC power generation facility will adjust a power output thereof so as to offset at least one of a surplus and a shortfall of power applied to said power grid by said wind turbine power generation facility relative to a predetermined amount.

16. The control processor of claim 12, wherein said another AC power generation facility is a hydroelectric AC power generation facility.

17. The control processor of claim 11, wherein said remote facility is a renewable exchange, in which units of power from renewable power generation facilities are exchanged as fungible power units.

18. The control processor of claim 10, wherein said renewable exchange is a computer-based facility that is configured to receive said coordination message as a digital message.

19. The control processor of claim 18, wherein said message forming mechanism is configured to prepare said digital message as at least one of an e-mail message, a dedicated control signal, a TCP/IP formatted message, an asynchronous transfer mode (ATM) message, and a simple network management protocol (SNMP) message.

20. The control processor of claim 18, wherein said message forming mechanism is configured to prepare said digital message as a portion of an Internet web page.

21. The control processor of claim 20, wherein said message is downloaded in response to at least one of a Java and an ActiveX program-initiated process implemented on at least one of said processor and another processor at said remote facility.

22. The control processor of claim 11, wherein:

said I/O device is configured to receive meteorological data from a remote source;

said computer readable instructions when executed by the processor implement a wind forecasting mechanism, said wind forecasting mechanism configured to provide a statistical indication of an amount of wind expected at a predetermined future time when said power is to be delivered from the wind turbine facility to the power grid; and

said processor is configured to determine an expected amount of power from said wind turbine power generation facility at said predetermined future time.

23. The control processor of claim 22, wherein:

said predetermined future time is less than 2 minutes, and said message formatting message is configured to include at least one of said statistical indication and said expected amount of power in said coordination message.

24. The processor of claim 23, wherein said remote facility is a power exchange and said amount of power is made available for sale on a Spot market.

25. The processor of claim 23, wherein:

said remote facility is at least one of a compressed gas-based storage facility, a fossil fuel plant and a hydroelectric power generation facility; and

said coordination message is sent to said remote facility in preparation for adjusting an output therefrom.

26. The control processor of claim 22, wherein:

said predetermined future time is less than 5 days and greater than 2 minutes, and said message formatting mechanism is configured to include at least one of said statistical indication and said expected amount of power in said coordination message; and

said remote facility is a power exchange and said amount of power is made available for sale on a competitively bid market.

27. The control processor of claim 22, wherein:

said predetermined future time is greater than 5 days, and said message formatting mechanism is configured to include at least one of said statistical indication and said expected amount of power in said coordination message; and

said remote facility is a power exchange and said amount of power is made available for sale on a competitively bid market.

28. The control processor of claim 27, wherein:

said predetermined future time is greater than 5 days, and said message formatting mechanism is configured to include at least one of said statistical indication and said expected amount of power in said coordination message; and redundant

said processor being configured to coordinate with a virtual energy storage facility to place the amount of power on an account of the wind turbine wind production facility and prevent a sale of said amount of power in said competitively bid market if a price for said amount of power is below a predetermined threshold.

29. The control processor of claim 11, wherein:

said I/O device is configured to receive meteorological data from a remote source;

said computer readable instructions when executed by the processor implement a wind forecasting mechanism, said wind forecasting mechanism being configured to provide a statistical indication of an amount of wind expected at a predetermined future time when said power is to be delivered from the wind turbine facility to the power grid; and

said remote facility includes a processor configured to determine an expected amount of power from said wind turbine power generation facility at said predetermined future time.

30. The control processor of claim 29, wherein:

said predetermined future time is less than 2 minutes, and said message formatting message is configured to include said statistical indication in said coordination message.

31. The processor of claim 30, wherein said remote facility is a power exchange and said amount of power is made available for sale on a Spot market.

32. The processor of claim 30, wherein said remote facility is a hydroelectric power generation facility and said coordination message is sent to said hydroelectric power generation facility in preparation for adjusting an output therefrom.

33. The control processor of claim 29, wherein:

said predetermined future time is less than 5 days and greater than 2 minutes, and said message formatting mechanism is configured to include said statistical indication in said coordination message; and

said remote facility is a power exchange and said amount of power is made available for sale on a competitively bid market.

34. The control processor of claim 29, wherein:

said predetermined future time is greater than 5 days, and said message formatting mechanism is configured to include said statistical indication in said coordination message; and

said remote facility is a power exchange and said amount of power is made available for sale on a competitively bid market.

35. The control processor of claim 34, wherein:

said predetermined future time is greater than 5 days, and said message formatting mechanism is configured to include said statistical indication in said coordination message; and

said processor being configured to coordinate with a virtual energy storage facility to

place the amount of power on an account of the wind turbine power production facility and prevent a sale of said amount of power in said competitively bid market if a price for said amount of power is below a predetermined threshold.

36. The control processor of claim 10, wherein:

the remote facility has an agreement with the renewable energy power production facility to adjust a power output from the remote facility by a predetermined amount in response to the coordination message indicating that the power amount from the renewable energy power production facility is above or below a predetermined threshold by the predetermined amount; and

at least one of the processor and the remote facility being configured to keep a virtual energy storage account of energy held on account of the renewable energy power production facility, and credit or debit the account by the predetermined amount.

37. The control processor of claim 10, wherein:

the renewable energy power production facility is a wind turbine power generation facility; and

the another AC power generation facility includes at least one of a hydroelectric power plant and a fossil fuel plant.

38. The control processor of claim 37, wherein:

the another AC power generation plant is one of a predetermined group of power production facilities that includes an energy-limited power production facility and a power-limited power production facility.

39. The control processor of claim 37, wherein after the another AC power production facility is determined, said processor is configured to determine whether transmission rights exist for delivering power over a transmission grid that interconnects said renewable energy power production facility and said another AC power generation facility when providing the amount of power to the power grid on behalf of the another AC power production facility.

40. The control processor of claim 37, wherein the processor is configured to prepare a reporting message to a system operator, informing the system operator of the wind turbine power generation facility having either produced another amount of power on behalf of the another AC power production facility or had the another AC power production facility provide the another amount of power to the power grid on behalf of an obligation of the wind

turbine power generation facility.

41. The control processor of claim 40, wherein said processor is configured to report to said system operator that the another AC power production facility is entitled to a predetermined amount of credit for having produced green power when the wind turbine power generation facility produces power in excess of the obligation and the another AC power production facility thus limits a power output therefrom by a corresponding amount.

42. The processor of claim 37, wherein said processor is configured to implement an accounting mechanism that is configured to keep track of deposits and withdrawals from the virtual energy storage account.

43. The processor of claim 42, wherein said accounting mechanism is configured to reflect a credit assigned to said wind turbine power production facility for making a monetary purchase of energy stored by the another AC power production facility.

44. The processor of claim 42, wherein said accounting mechanism is configured to reflect a debit to said wind turbine power production facility for accepting a monetary payment for an amount of energy held by the another AC power production facility on behalf of the wind turbine power production facility.

45. The processor of claim 42, wherein said accounting mechanism is configured to keep track of virtual energy storage accounts for a plurality of renewable energy power providers.

46. A computer program product containing computer readable instructions that when executed on a processor facilitate application of AC power from a renewable energy power production facility to a power grid, comprising:

a power monitoring mechanism configured to monitor an amount of premier power produced by the renewable power production facility,

a message forming mechanism configured to include an indication in a coordination message sent to a remote facility regarding an amount of AC power applied by said renewable energy power production facility to said power grid; and

a message communications mechanism configured to send said coordination mechanism to said remote facility.

47. The computer program product of claim 46, wherein the renewable energy power production facility is a wind turbine power generation facility

48. The computer program product of claim 47, wherein said remote facility is

another AC power generation facility and said another AC power generation facility is configured to adjust a power output thereof at a time that coincides with when said amount of power is delivered by said wind turbine power generation facility.

49. The computer program product of claim 48, wherein said indication in said coordination message corresponds with AC power that is delivered contemporaneously to said power grid.

50. The computer program product of claim 48, wherein:

said indication in said coordination message corresponds with AC power that is to be delivered at a predetermined future time; and

said message forming mechanism is configured to include in said coordination message said predetermined future time so said another AC power generation facility is informed as to when to adjust the power output thereof so as to compensate for either a surplus or shortfall from said renewable energy power production facility relative to a predetermined amount.

51. The computer program product of claim 48, wherein said message communications mechanism is configured to receive a reply message from said another AC power generation facility confirming that the another AC power generation facility will adjust a power output therefrom so as to offset at least one of a surplus and shortfall of power applied to said power grid by said wind turbine power generation facility relative to a predetermined amount.

52. The computer program product of claim 46, wherein said remote facility includes a computer that is configured to receive said coordination message as a digital message.

53. The computer program product of claim 52, wherein said message forming mechanism is configured to prepare said digital message as at least one of an e-mail message, a dedicated control signal, a TCP/IP formatted message, an asynchronous transfer mode (ATM) message, and a simple network management protocol (SNMP) message.

54. The computer program product of claim 52, wherein said message forming mechanism is configured to prepare said digital message as a portion of an Internet web page.

55. The computer program product of claim 54, wherein said message is downloaded in response to at least one of a Java and ActiveX program initiated process implemented on at least one of said processor and a processor at said remote facility.

56. The computer program product of claim 47, further comprising:

a wind forecasting mechanism configured to provide a statistical indication of an amount of wind expected at a predetermined future time when said power is to be delivered from the wind turbine facility to the power grid; and

a mechanism for determining an expected amount of power from said wind turbine power generation facility at said predetermined future time.

57. The computer program product of claim 47, wherein said wind forecasting mechanism receives meteorological forecast data from a remote source.

58. The computer program product of claim 46, further comprising:

a mechanism for keeping a virtual energy storage account of energy held on account of the renewable energy power production facility, and credit or debit the account by a predetermined amount, wherein

the remote facility has an agreement with the renewable energy power production facility to adjust a power output from the remote facility by the predetermined amount in response to the coordination message indicating that the power amount from the renewable energy power production facility is above or below a predetermined threshold by the predetermined amount.

59. The computer program product of claim 46, wherein:

the renewable energy power production facility is a wind turbine power generation facility; and

the another AC power generation facility includes at least one of a hydroelectric power plant and a fossil fuel plant.

60. The computer program product of claim 59, wherein:

the another AC power generation plant is one of a predetermined group of power production facilities that includes an energy-limited power production facility and a power-limited power production facility.

61 The computer program product of claim 59, wherein after the another AC power production facility is determined, said computer program product is configured to determine whether transmission rights exist between said renewable power production facility and said another AC power generation facility over a transmission grid when providing the amount of power to the power grid on behalf of the another AC power production facility.

62. The computer program product of claim 59, further comprising a mechanism for sending a reporting message to a system operator, informing the system operator of the wind

turbine power generation facility having either produced another amount of power on behalf of the another AC power production facility or having the another AC power production facility provide the another amount of power to the power grid on behalf of an obligation made by the wind turbine power generation facility.

63. The computer program product of claim 62, wherein said processor is configured to report to said system operator that the another AC power production facility is entitled to a predetermined amount of credit for having produced green power, when the wind turbine power generation facility produces power in excess of the obligation made and the another AC power production facility thus limits a power output therefrom by a corresponding amount.

64. The computer program product of claim 59, further comprising an accounting mechanism that is configured to keep track of deposits and withdrawals from the virtual energy storage account.

65. The computer program product of claim 64, wherein said accounting mechanism is configured to reflect a credit assigned to said wind turbine power generation facility for making a monetary purchase of energy stored by the another AC power production facility.

66. The computer program product of claim 64, wherein said accounting mechanism is configured to reflect a debit to said wind turbine power generation facility for accepting a monetary payment for an amount of energy held by the another AC power production facility on behalf of the wind turbine power production facility.

67. The computer program product of claim 64, wherein said accounting mechanism is configured to keep track of virtual energy storage accounts for a plurality of renewable energy power providers.

68. A system for facilitating application of AC power from a renewable energy power production facility to a power grid, comprising:

the renewable energy power production facility configured to produce an amount of electrical power at a time variable frequency that is not compatible with a power grid;

a converter connected between said renewable energy power production facility and the power grid and configured to convert said amount of electrical power from the renewable energy power production facility to premier power that is compatible with a frequency and operational requirement of the power grid such that an output from said converter may be applied directly to the power grid;

a control processor including,

a communication port configured to transfer to a remote facility an indication regarding an amount of premier power produced by said converter,

a memory configured to hold computer readable instructions,

a processor configured to execute said computer readable instructions so as to implement,

a power monitoring mechanism configured to monitor said amount of premier power,

a message forming mechanism configured to include said indication in a coordination message that is sent through a communication link to said remote facility regarding the amount of premier power available to apply to said power grid.

69. The system of Claim 68, wherein said converter being a co-active converter that includes a DC-to-AC converter configured to receive the amount of electrical power from the renewable energy power production facility, where said amount of electrical power is at a direct current, and convert the amount of electrical power to AC;

a rotating converter; and

a power transformer connected between the rotating converter and the power grid.

70. The system of Claim 69, wherein said rotating converter includes at least one of

a static converter and a rotating converter configured to convert from DC to a frequency standard,

a frequency converter configured to convert from a variable low-frequency AC to a frequency standard,

a frequency converter configured to convert from a constant low-frequency AC to a frequency standard,

a rotating converter configured to supply at least one of reactive power and active power to a frequency standard, and

a power transformer configured to provide a voltage adaptation for adjusting a short circuit output capacity of the renewable energy power production facility.

71. The system of Claim 70, wherein said rotating converter is configured to provide at least one of

a start-up operation of the power grid after a major fault,

a source of active power so as to provide a priming operation for the amount of

electrical power from the renewable energy power production facility,

a source of reactive power to the power grid at a predetermined quantity,

a suppressor of low order harmonics from the DC-to-AC converter,

a source of active AC voltage support for the DC-to-AC converter,

a separation of active power control and reactive power control, and

a supply of short-circuit power during faults operations of the power grid.

72. The system of Claim 69, wherein said rotating converter is a two-winding machine having two sets of AC three-phase windings arranged in a stator of the rotating converter and being exposed to AC and DC fields when in operation.

73. The system of Claim 69, wherein said rotating converter is a constant speed synchronous machine with a winding arranged in a rotor.

74. The system of Claim 73, wherein said winding of said rotating converter is a DC winding.

75. The system of Claim 69, wherein said rotating converter being an adjustable speed asynchronous machine having at least one of brush-less drives and brush-based drives.

76. The system of Claim 75, wherein said brush-based drives being a Static Scherbius drive.

77. The system of Claim 69, wherein said rotating converter is configured to withstand a large voltage sag in voltage provided by said renewable energy power production facility without tripping a breaker connected to the power grid.

78. The system of Claim 69, wherein said rotating converter being configured to provide a moment of inertia that is available as a short term storage facility for wind energy used to produce said renewable energy power production facility during a period of wind lull.

79. The system of Claim 69, wherein said co-active converter further comprises a prime mover configured to provide an alternative power source to said rotating converter.

80. The system of Claim 79, wherein said prime mover being fed from fossil fuel.

81. The system of Claim 79, wherein said prime mover being fed by at least one of vegetable oil and a compressed gas-based storage facility.

82. The system of Claim 69, wherein said power transformer being a three-winding, three-phase transformer.

83. The system of Claim 68, further comprising said communication link configured to convey said coordination message to said remote facility, wherein

said remote facility being another AC power generation facility configured to adjust a power output thereof at a time that coincides with when said premier power is delivered to said power grid by said converter.

84. The system of Claim 83, wherein:

said remote facility has an agreement with the renewable energy power production facility to adjust a power output from the remote facility by a predetermined amount in response to the coordination message indicating that the premier power from the converter has an energy measured over an effective time period being above or below a predetermined threshold by the predetermined amount; and

at least one of the processor and the remote facility being configured to keep a virtual energy storage account of energy held on account of the renewable energy power production facility and credit or debit the account by the predetermined amount, said converter being a co-active converter.

85. The system of Claim 84, wherein said processor is configured to implement an accounting mechanism that is configured to keep track of deposits and withdrawals from said virtual energy storage account made by said renewable energy power production facility.

86. The system of Claim 85, wherein said accounting mechanism is configured to reflect a credit assigned to said renewable energy power production facility for making a monetary purchase of energy stored by the remote facility.

87. The system of Claim 85, wherein said accounting mechanism is configured to reflect a debit to said renewable energy power production facility for accepting a monetary payment for an amount of energy held by the remote facility on behalf of the renewable energy power production facility.

88. The system of Claim 85, wherein:

said accounting mechanism is configured to keep track of virtual energy storage accounts for a plurality of renewable energy power production facilities; and

said system further comprising a collection and transmission grid interconnecting the renewable energy power production facility, and a plurality of other renewable energy power production facilities to the co-active converter such that energy provided by the renewable energy power production facility in the plurality of renewable energy power production facilities provides a cumulative power to said co-active converter.

89. The system of Claim 88, wherein an output of said collection and transmission

grid being provided to a high voltage DC link.

90. The system of Claim 68, further comprising a dedicated control link configured to interconnect said control processor and said remote facility, wherein

said message forming mechanism is configured to send said coordination message over said dedicated control link, so as to control a power output by said remote facility to correspond with amount of premier power delivered by said converter.

91. The system of Claim 90, wherein said coordination message is configured to inform said remote facility of a future time at which said power is to be delivered from said renewable energy power production facility, so that said remote facility can reduce an output thereof by a corresponding amount of power delivered by the remote facility such that an aggregate amount of power delivered by both the renewable energy power production facility and the remote facility equates to an composite aggregate amount of power obliged to be delivered by the renewable energy power production facility and the remote facility.

92. The system of Claim 90, wherein said remote facility is configured to increase a power production output therefrom, so as to compensate for a shortfall from said renewable energy power production facility.

93. The system of Claim 68, wherein said processor is configured to provide said coordination message in a text based format so that an operator may audibly inform another operator at the remote facility regarding a request to adjust an output power from the remote facility so as to offset at least one of a surplus and a shortfall of power produced at the renewable energy power production facility.

94. The system of Claim 68, wherein said control processor further includes an interface for hosting a web page by which coordination between the renewable energy power production facility and the remote facility is maintained so as to coordinate respective amounts of power produced by the renewable energy power production facility and the remote facility.

95. The system of Claim 68, wherein said processor is configured to implement a load shedding messaging mechanism that provides a load shedding message to the remote facility such that the remote facility can alter a load imparted by the remote facility to the power grid in response to an amount of premier power delivered by the converter.

96. The system of Claim 68, wherein said processor is configured to implement a renewable exchange that offers for sale said premier power as a unit of power for purchase by

a third party.

97. The system of Claim 96, wherein said message forming mechanism is configured to include a meteorological forecast message provided to the renewable exchange in association with said unit of power so said third party may be informed as to a likelihood of said renewable energy power production facility actually being able to deliver the premier power at a predetermined future time.

98. The system of Claim 97, wherein said meteorological forecast message includes an indication of the predetermined future time, and a statistical indicator of the likelihood of the renewable energy power production facility being able to deliver the premier power as a unit of power.

99. The system of Claim 96, wherein said renewable exchange is configured to receive an offer for said unit of power and accept said offer by said renewable energy power production facility when said offer is above a predetermined price.

100. The system of Claim 68, wherein said processor is configured to implement a transmission rights recognition mechanism that identifies whether said renewable energy power production facility has obtained transmission rights from said converter to said remote facility, and produce a warning message if the transmission rights have not been established.

101. The system of Claim 96, wherein said processor is configured to include an accounting mechanism that keeps track of a price at which said unit of power is sold, and an entity from which payment for a purchaser of the unit of power may be accepted.

102. A computer-based facility for trading units of electrical power, at least a portion of each unit being from a renewable energy power production facility, comprising:

a first I/O mechanism configured to receive a bid message including an amount of power to be delivered by said renewable energy power production facility to said power grid at a predetermined future time;

a second I/O mechanism configured to receive an offer message including an offer price for said amount of power;

a memory configured to hold computer readable instructions; and

a processor configured to execute said computer readable instructions so as to implement,

an offer acceptance mechanism configured to determine if said offer price in said offer message meets or exceeds a predetermined price, and

an acceptance notification mechanism configured to send a notification message to a sender of said bid message informing said sender of an acceptance by a purchaser.

103. The facility of claim 102, wherein said offer acceptance mechanism being configured to determine if the offer price has been met if said offer price meets or exceeds other offers within a predetermined period of time.

104. The facility of claim 102, wherein said offer acceptance mechanism is configured to determine if said offer price is met when said offer price meets or exceeds a predetermined price.

105. The facility of claim 102, wherein said at least a portion of said unit of power being premier power.

106. The facility of claim 102, wherein said acceptance notification mechanism is configured to include in said notification message, at least one of an identity of a purchaser and a location of where the power from the renewal energy source is to be delivered on behalf of the purchaser.

107. The facility of claim 102, wherein said message includes an indication that said amount of power being guaranteed by the power generated from another electrical power generation facility.

108. The facility of claim 107, wherein the amount of power is guaranteed by an options contract.

109. The facility of claim 107, wherein said amount of power is guaranteed by a bi-lateral agreement between another electrical power generation facility and an operator of a renewable energy source such that a short fall from the renewable energy source is compensated for by increased production by the other electrical energy production facility.

110. The facility of claim 102, wherein said offer message includes the offer price from pooled resources from multiple investors, respective of the investors contributing predetermined portions of said pooled resources to constitute said offer price.

111. The facility of claim 110, wherein said pooled resources are aggregated in the form of a mutual fund.

112. The facility of claim 102, wherein said second I/O mechanism is configured to receive the offer message from a remote computer facility that aggregates the pooled resources from the multiple investors at the remote computer facility and presents a portion of

the pooled resources as the offer price.

113. The facility of claim 103, wherein said acceptance notification mechanism informs said remote computer facility of the acceptance so that said remote computer facility can account for the respective investment accrual attributable to respective of the multiple investors when said unit of power is delivered to the power grid.

114. The facility of claim 102, wherein said processor is configured to provide an evaluation mechanism that receives meteorological data from an external source so as to predict a likelihood of delivery of the renewal energy source at said predetermined future time.

115. The facility of claim 102, wherein said unit of power from the renewable energy source being supplemented with power from a virtual energy storage facility during a period of time when a load on the power grid is high and said renewal energy source being configured to provide power therefrom on behalf of the virtual energy storage facility in time periods when the load is low.

116. A method for coordinating power output from a renewable power production facility with another power production facility so as to implement a virtual energy storage mechanism for the renewable power production facility, comprising steps of:

producing a predetermined amount of electric power from the renewable power production facility;

determining that an amount of power produced by the renewable power production facility deviates from a threshold by a predetermined quantity;

informing another power production facility of said predetermined quantity; and

adjusting a power output at said other power production facilities by an amount that corresponds with said predetermined quantity.

117. The method of Claim 116, wherein said renewable power production facility being a wind turbine electric power production facility.

118. The method of Claim 116, further comprising a step of keeping an account of an amount of virtual energy storage held by the virtual energy storage mechanism on behalf of the renewable power production facility, said balance reflecting changes by said predetermined quantity when said adjusting step is performed.

119. The method of Claim 118, wherein said keeping step includes allowing for a negative balance during peak production times, and adding to said balance during off-peak

times.

120. The method of Claim 118, further comprising a step of selling a unit of power output from said renewable power production facility when a market sale price for said unit of power exceeds an estimated future value of said unit of power produced at a later time.

121. The method of Claim 116, further comprising a step of offering for sale a unit of power, said unit of power including an undetermined amount of electric power from said renewable power production facility at a predetermined future time and guaranteeing delivery of said unit of power with an adjusted power output from the another power production facility.

122. The method of Claim 121, further comprising a step of offering for sale said unit of power on a renewable exchange.

123. The method of Claim 122, further comprising a step of setting a price at which said power unit is offered for sale, said price being greater than or equal to an estimated value of storing the power unit in said virtual energy storage mechanism for use at a later time.

124. The method of Claim 122, further comprising a step of notifying an operator of said renewable power production facility when said power unit is sold.

125. The method of Claim 121, further comprising a step of obtaining transmission rights for transferring said power output from the renewable power production facility to a transmission grid that connects to the another power production facility when said adjusting step adjusts the power output to a lower level than for what the another power production facility is obligated to provide.

126. The method of Claim 122, further comprising the step of offering meteorological data associated with when said power output from said renewable power production facility is offered for delivery, and estimating a likelihood of delivery using said meteorological data.

127. The method of Claim 126, further comprising a step of placing a value on the power unit based on a future likelihood of delivery.

128. The method of Claim 118, further comprising a step of selling a predetermined portion of an accumulated energy stored at said virtual energy storage mechanism.

129. The method of Claim 116, further comprising a step of controlling directly said another power production facility to implement said adjusting step through a ganged operation with said renewable power production facility.

130. The method of Claim 116, wherein said adjusting step includes adjusting the power output by receiving a data message via an electronic communication with said renewable power production facility.

131. The method of Claim 116, wherein said adjusting step includes informing said another power production facility of said predetermined quantity using at least one of non-electronic communication and telephonic communication.

132. A method for enhancing a commercial value of a unit of electric power produced by a renewable power production facility, comprising steps of:

identifying a predetermined amount of power predicted to be produced from the renewable power production facility at a predetermined future time;

converting the predetermined power from the renewable power production facility to a unit of premier power for application to a power grid at a standard frequency;

selling said unit of premier power for delivery at the predetermined future time;

delivering to the power grid the unit of power at the predetermined future time.

133. The method of claim 132, further comprising the step of guaranteeing the unit of power with supplemental power produced at a remote facility so as to supplement an amount of actual premier power that is delivered by said renewable power production facility so that a combination of the supplemental power and the actual premier power substantially equals the unit of premier power.

134. The method of claim 133, wherein said guaranteeing step includes obtaining a contractual obligation from the remote facility to provide the supplemental power.

135. The method of Claim 132, further comprising a step of obtaining transmission rights to transfer the unit of premier power from the renewable power production facility to a portion of the power grid to which a purchaser of the premier power unit is obligated to provide the premier power unit at the predetermined future time.

136. The method of Claim 132, wherein said converting step includes converting the predetermined power using a co-active converter.

137. The method of Claim 136, wherein said converting step includes providing to said power grid a predetermined quantity of reactive power.

138. The method of Claim 136, further comprising a step of providing a short circuit power to the power grid when a fault occurs in the power grid.

139. The method of Claim 136, wherein said converting step includes suppressing

harmonics in the unit of premier power.

140. The method of Claim 136, wherein said converting step includes providing supplemental power from a prime mover to the predetermined power from the renewable power production facility.

141. The method of Claim 132, further comprising a step of collecting electrical power from multiple renewable power production facilities prior to performing said converting step.

142. A method for managing an investment portfolio of premier power units, comprising steps of:

receiving contributions in various amounts from respective investors;

assigning shares to said investors based on respective contributions made by the respective investors;

purchasing a portfolio of premier power units with the contributions; and

receiving payment for delivery of respective of said premier power units, wherein said contributions being at least one of money and potential energy.

143. The method of Claim 142, further comprising a step of allocating fund assets in increments after respective of said premier power units are sold.

144. The method of Claim 142, further comprising a step of receiving meteorological data to assist in determining which premier power units to purchase as part of said portfolio.

145. A system for converting electrical power produced from a renewable energy power production facility into premier power, comprising:

means for producing a time variable electrical output power from the renewable energy power production facility;

means for determining whether the time variable electrical output power is below a predetermined level; and

means for supplementing the output power with power from a converter mechanism having at least one of

means for providing a source of reactive power, and

means for providing active power.

146. A system for coordinating power output from a renewable power production facility with another power production facility so as to implement a virtual energy storage mechanism for the renewable power production facility, comprising:

means for producing a predetermined amount of electric power from the renewable power production facility;

means for determining that an amount of power produced by the renewable power production facility deviates from a threshold by a predetermined quantity;

means for informing another power production facility of said predetermined quantity; and

means for adjusting a power output at said other power production facility by an amount that corresponds with said predetermined quantity.

147. A system for enhancing a commercial value of a unit of electric power produced by a renewable power production facility, comprising:

means for identifying a predetermined amount of power expected to be produced from the renewable power production facility at a predetermined future time;

means for converting the predetermined power from the renewable power production facility to a unit of premier power for application to a power grid at a standard frequency;

means for selling said unit of premier power for delivery at a predetermined future time; and

means for delivering to the power grid the unit of power at the predetermined future time.

148. A system for managing an investment portfolio of premier power units, comprising:

means for receiving contributions in various amounts from respective investors;

means for assigning shares to said investors based on respective contributions made by the respective investors;

means for purchasing a portfolio of premier power units with the contributions; and

means for receiving payment for delivery of respective of said premier power units, wherein respective of said contributions having a monetary value.

149. A system for prognosticating an electric power output from a renewable power production facility comprising:

means for receiving at least one of meteorological and oceanographic data from a forecasting and data analysis system;

means for receiving other data from at least one sensor positioned locally relative to the renewable power production facility; and

means for predicting an electrical power output from the renewable power production facility from the at least one of meteorological and oceanographic data and the other data.

150. The system of claim 149, wherein said at least one of the meteorological and oceanographic data being from at least one of a regional, a national and an international forecasting and data analysis system.

151. The system of claim 149, wherein said at least one sensor is positioned within one mile of said renewable power production facility.

152. The system of claim 149, wherein said at least one sensor is positioned at said renewable power production facility.

153. The system of claim 149, wherein said means for predicting includes means for refining and calibrating the electric power output prediction using at least one of Multivariate data analysis, a neural network and a Fuzzy Control-based mechanism.

154. The system of claim 153, wherein said means for predicting includes a processor.

155. The system of claim 149, wherein said at least one sensor being configured to provide at least one of meteorological and oceanographic data from a vicinity local to said renewable power production facility.

156. The system of claim 149, further comprising:

means for forwarding a prognosticated electrical power output from the means for predicting to a renewable energy exchange.

157. The system of claim 149, further comprising:

means for forwarding a prognosticated electrical power output from the means for predicting to an operator of a renewable energy production facility.

158. The system of claim 149, further comprising:

means for forwarding a prognosticated electrical power output from the means for predicting to an operator of another power production facility.

159. The system of claim 158, wherein said another power production facility being one of an energy-limited power production facility and a power-limited power production facility.

160. The system of claim 149, wherein said means for predicting electrical power output from the renewable power production facility includes means for predicting the electrical power output within 5 days in advance of an actual production date.

161. The system of claim 149, wherein said means for predicting electrical power output from the renewable power production facility includes means for predicting a prognosticated electrical power output more than 5 days in advance of an actual production date.

162. A method for prognosticating an electric power output from a renewable power production facility comprising steps of:

receiving at least one of meteorological and oceanographic data from a forecasting and data analysis system;

receiving other data from at least one sensor positioned locally to the renewable power production facility; and

predicting an electrical power output from the renewable power production facility from the at least one of meteorological and oceanographic data and the other data.

163. The method of claim 162, wherein said at least one of the meteorological and oceanographic data being from at least one of a regional, a national and an international forecasting and data analysis system.

164. The method of claim 162, wherein said at least one sensor is positioned within one mile of said renewable power production facility.

165. The method of claim 162, wherein said at least one sensor is positioned at said renewable power production facility.

166. The method of claim 162, wherein said step of predicting includes refining and calibrating the electric power output prediction using at least one of Multivariate data analysis, a neural network and a Fuzzy Control-based mechanism.

167. The method of claim 162, wherein said at least one sensor being configured to provide at least one of meteorological and oceanographic data from a vicinity local to said renewable power production facility.

168. The method of claim 162, further comprising a step of:

forwarding a prognosticated electrical power output to a renewable energy exchange.

169. The method of claim 162, further comprising a step of:

forwarding a prognosticated electrical power output to an operator of a renewable energy production facility.

170. The method of claim 162, further comprising a step of:

forwarding a prognosticated electrical power output to an operator of another power

production facility.

171. The method of claim 162, wherein said step of predicting electrical power output from the renewable power production facility includes predicting the electrical power output within 5 days in advance of an actual production date.

172. The method of claim 162, wherein said step of predicting electrical power output from the renewable power production facility includes predicting a prognosticated electrical power output more than 5 days in advance of an actual production date.

173. A computer program product for prognosticating an electric power output from a renewable power production facility, comprising computer readable instructions that when executed on a processor perform steps of:

receiving at least one of meteorological and oceanographic data from a forecasting and data analysis system;

receiving other data from at least one sensor positioned locally to the renewable power production facility; and

predicting an electrical power output from the renewable power production facility from the at least one of meteorological and oceanographic data and the other data.

174. The computer program product of claim 173, wherein said at least one of the meteorological and oceanographic data being from at least one of a regional, a national and an international forecasting and data analysis system.

175. The computer program product of claim 173, wherein said at least one sensor is positioned within one mile of said renewable power production facility.

176. The computer program product of claim 173, wherein said at least one sensor is positioned at said renewable power production facility.

177. The computer program product of claim 173, wherein said step of predicting includes refining and calibrating the electric power output prediction using at least one of Multivariate data analysis, a neural network and a Fuzzy Control-based mechanism.

178. The computer program product of claim 173, wherein said at least one sensor being configured to provide at least one of meteorological and oceanographic data from a vicinity local to said renewable power production facility.

179. The computer program product of claim 173, further comprising a step of:

forwarding a prognosticated electrical power output to a renewable energy exchange.

180. The computer program product of claim 173, further comprising a step of:

forwarding a prognosticated electrical power output to an operator of a renewable energy production facility.

181. The computer program product of claim 173, further comprising a step of:

forwarding a prognosticated electrical power output to an operator of another power production facility.

182. The computer program product of claim 173, wherein said step of predicting electrical power output from the renewable power production facility includes predicting the electrical power output within 5 days in advance of an actual production date.

183. The computer program product of claim 173, wherein said step of predicting electrical power output from the renewable power production facility includes predicting a prognosticated electrical power output more than 5 days in advance of an actual production date.

184. A computer-based method for managing an investment portfolio of renewable power production facilities, comprising steps of:

receiving contributions in various amounts from respective investors;

assigning shares to said investors based on respective contributions made by the respective investors;

financing a purchase of a predetermined number of renewable power production facilities with said contributions;

receiving a plurality of payments for delivery of premier power units from said predetermined number of renewable power production facilities; and

apportioning said plurality of payments among said shares, wherein said contribution having a monetary value.